UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,925	04/13/2007	**Manuel Otto**	2003P01013WOUS	9205

46726 7590 04/15/2009

BSH HOME APPLIANCES CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
100 BOSCH BOULEVARD
NEW BERN, NC 28562

EXAMINER	
JENNISON, BRIAN W	

ART UNIT	PAPER NUMBER
3742	

MAIL DATE	DELIVERY MODE
04/15/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/582,925	OTTO ET AL.	
	Examiner	Art Unit	
	BRIAN JENNISON	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/13/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Specification

1. The disclosure is objected to because of the following informalities: The technical aspect of the invention should be clearly described in the specification and shall not be referred to the claim, therefore, the specification references claim numbers (such as noted in paragraph [008]) should be deleted or an appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 15, 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 15 recites the limitation "the heating means" in line 3. There is insufficient antecedent basis for this limitation in the claim. “The heating means” is not recited in Claim 13.

5. Claim 18 recites the limitation "the supply voltage" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim. The term “the supply voltage is not recited in claims 13 or 17.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 13-15, 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Cage et al (US 4,198,957).

Cage teaches:

Regarding Claim 13: A circuit arrangement for protecting from overheating a heating element **(13 which may be used for fluids)** whose resistance value is a function of its temperature, the circuit arrangement comprising:

a switch means;

a power supply **(27)** coupled to the heating element for supplying a current to the heating element **(13)** by means of the switch means **(21, 23)**;

a switch control circuit **(47)** with an output for controlling the switch means **(21, 23)** such that the switch means is switched to a conducting state when the switch control circuit is in a first state and the switch means is switched to a non-conducting state when the switch control circuit is in a second state; **(Column 4, Lines 1-17)**

a current sensor means coupled to the heating element, the output of the current sensor providing a signal proportional to the current flowing through the heating element **(A**

resistor 37 may be tapped for measuring current and provides a signal proportional to the heating element.) .;

a first scaling means **(31)** whose output provides a signal proportional to the supply voltage of the heating element;

a first detector means **(39, 41)** having inputs each coupled to an output of a respective one of the current sensor means and the first scaling means, the first detector means having an output that provides a difference signal formed from the signals of the current sensor means and the scaling means; and **(Fig 1 shows the inputs coupled to the resistor 37 and will provide a difference signal at its output.)**

an evaluation circuit **(43 can be used to compare the differential signal from the detector means 39, 41)** operable to compare the difference signal determined by the first detector means with a reference signal, the switch control circuit being operatively connected to the evaluation circuit such that the switch control circuit can be switched from the first state into the second state by the evaluation circuit. **(43 can be used to change the switch control circuit 47 from the first state to second state.)**

Regarding Claim 14: The first scaling means 31 and current detector 37 have the same magnitude as the heating element 13. **See Fig 1.**

Regarding Claim 15: The detector 39, 41 is capable of detecting a difference voltage only in the event of a resistance change in the heating element 13.

Regarding Claim 22: The heating element may be a layer of electrically conductive material with a cross section sufficient enough to be self supporting. This may be a thick film paste. The heating element has a negative temperature coefficient wherein the temperature rises with resistance. **See Column 2, Lines 25-45.**

8. Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by Gava et al (EP 0 579 947) as cited by applicant.

Gava teaches:

Regarding Claim 24: A method for protecting a heating device **(heating element 3)** for water damage in which the resistance is a function of its temperature and the change in resistance is detected and compared with a reference signal in order to interrupt the heating circuit via a switching means **(21)** if necessary. **(See Abstract, Column 4, Lines 11-54 and fig.2)**

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 16-17, 19, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cage in view of Luy et al (US 4,035,692).

The teachings of Cage have been discussed above.

Cage fails to teach:

Regarding Claim 16: The circuit arrangement, wherein the evaluation circuit comprises a second detector means with two inputs and one output, wherein the output signal of the first detector means can be supplied to one input and the reference signal can be supplied to the other input, and wherein the output forms the output of the evaluation circuit.

Regarding Claim 17: The circuit arrangement wherein the evaluation circuit has a second scaling means which is used to set the reference signal.

Regarding Claim 19: The circuit arrangement wherein the output of the second detector means is fed back to the input.

Regarding Claim 21: The circuit arrangement wherein the switch means is a relay that becomes operative in the first state of the switch control circuit when the heating element is operating correctly.

Luy et al teaches:

Regarding Claim 16: Fig 1 shows the second detector of OP2 with two inputs +, - and one output. Fig 1 shows the output of OP1 supplied to an input of OP2 and forms and output of an evaluation circuit.

Regarding Claim 17: Fig 1 shows a second scaling means from R5 and the POT, which is input as a reference signal to OP2.

Regarding Claim 19: Fig 1 shows the output of OP2 fed back to an input by way of R8.

Regarding Claim 21: Relay CR1 is a switch operative in a first open state when the device is operating correctly. **See Fig 1 and Column 5, Lines 12-30.**

In view of Luy et al's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Cage, the second detector, second scaling means, feedback loop and relay since Luy teaches the OP2 for comparing an input signal with a reference signal, the scaling circuit for controlling the gain of OP2, the feedback loop to trigger the amplifier, and the relay for performing a protective function.

11. Claims 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cage as modified by Luy in further view of Abe et al (US 4,516,543).

The teachings of Cage as modified by Luy have been discussed above.

Cage also teaches:

Regarding Claim 20: The AC power supply shown in Fig 1.

Cage as modified by Luy fails to teach:

Regarding Claim 18: The circuit arrangement wherein the second scaling means is coupled to the supply voltage acting upon the heating element to derive the reference signal from the supply voltage.

Regarding Claim 20: The circuit arrangement wherein and a rectifier arrangement and a smoothing circuit are connected between the first and the second detector means.

Abe teaches:

Regarding Claim 18: Fig 1 shows a second scaling means before OP Amp 34 at the negative terminal which derives a reference signal from the power supply at ST. With the power supply at ST being coupled to the heating element 63.

Regarding Claim 20: Fig 1 shows a first detector 15 and second detector 79 with a smoothing circuit of 78 and a capacitor connected in parallel and a rectifier 81 between the two.

In view of the teachings of Abe, it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Cage as modified by Luy the second scaling means coupled to the power supply, the smoothing circuit and rectifier since, Abe teaches a rectifier for keeping the output at a low level, the resistor and capacitor in parallel for smoothing the signal, and the second scaling means coupled to the power supply for providing a reference voltage to the comparator.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

De Broeck et al (US 4,736,090) teaches a heating circuit.

Crocket et al (US 4,777,350) teaches a heater with a controlling circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN JENNISON whose telephone number is (571)270-5930. The examiner can normally be reached on M-Th 7:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN JENNISON/
Examiner, Art Unit 3742

4/7/2009

/TU B HOANG/

Supervisory Patent Examiner, Art Unit 3742